

Abstract of the Disclosure

An emitter for an electron-beam projection lithography (EPL) system and a manufacturing method therefor are provided. The electron-beam emitter includes a substrate, an insulating layer overlying the substrate, and a gate electrode including a base layer formed on top of the insulating layer to a uniform thickness and an electron-beam blocking layer formed on the base layer in a predetermined pattern. The manufacturing method includes steps of: preparing a substrate; forming an insulating layer on the substrate; forming a base layer of a gate electrode by depositing a conductive metal on the insulating layer to a predetermined thickness; forming an electron-beam blocking layer of the gate electrode by depositing a metal capable of anodizing on the base layer to a predetermined thickness; and patterning the electron-beam blocking layer in a predetermined pattern by anodizing. The emitter provides a uniform electric field within the insulating layer and simplify the manufacturing method therefor.